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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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IP Administration
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Fort Collins, CO 80527-2400

EXAMINER

ORTIZ, BELIX M

ART UNIT	PAPER NUMBER
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2164

DATE MAILED: 11/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/068,466

Applicant(s)

SAFFER ET AL.

Examiner

Belix M. Ortiz

Art Unit

2164

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-22, 29-35, 39-53, 60-63, 65-67 and 69-73 is/are rejected.
- 7) ☒ Claim(s) 5-7, 23-28, 36-38, 54-59, 64, 68 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. In response to communications files on 16-August-2005, the specification of the disclosure. Therefore, claims 1-73 are presently pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 8-13, 29-35, 39-44, 60-63, 65-67, and 69 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawai (U.S. patent 5,717,924).

As to claim 1, Kawai teaches an operational data store (see abstract; column 1, lines 8-10; and column 3, lines 29-33), comprising:

an insert table for storing new data (see figure 10A, character 320);

a history table for storing historical data (see figure 10A, character 328); and

transfer logic for periodically transferring new data from the insert table to the history table (see figure 10A where in “the insert table” is the old table and “the history table” is “new table”).

As to claim 2, Kawai teaches wherein the history table is partitioned (see column 2, lines 27-29).

As to claim 3, Kawai teaches wherein the history table is partitioned by range (see column 18, lines 45-46).

As to claim 4, Kawai teaches wherein each partition is further sub-partitioned (see Figures 2 and 5).

As to claim 8, Kawai teaches the transfer logic comprising:
a secondary table (see figure 10B, character 344);
fill logic for filling the secondary table with selected data from the insert table (see figure 10B); and
secondary transfer logic for transferring the secondary table into the history table, the selected data thereby being transferred into the history table (see figure 10B).

As to claim 9, Kawai teaches wherein the history table has an indexing scheme, the secondary transfer logic (see figures 15A and 15B; column 10, line 17; and column 13, lines 9-19) further comprising:

indexing logic for applying the history table indexing scheme to the secondary table (see figures 15A and 15B; column 10, line 17; and column 13, lines 9-19).

As to claim 10, Kawai teaches wherein the indexing logic applies the history table indexing scheme to the secondary table prior to transferring the secondary table into the history table (see figures 15A and 15B).

As to claim 11, Kawai teaches the secondary transfer logic further comprising:
table logic for creating a new partition the history table, the new partition for
swapping with the secondary table (see table 2, lines 9).

As to claim 12, Kawai teaches wherein the secondary transfer logic swaps the
secondary table: and the new partition by exchanging respective pointers (see column
10, line 14 and column 10, lines 25-30).

As to claim 13, Kawai, teaches the operational data store further comprising:
a query engine for applying a database query to both the history table and
the insert table (see column 2, lines 19-21 and column 4, lines 29-42).

As to claim 29, Kawai teaches wherein data from the insert table is transferred to
the history table at regular intervals (see column 16, lines 37-42 and column 16, lines
46-50).

As to claim 30, Kawai teaches wherein the intervals are configurable (see column
16, lines 37-52).

As to claim 31, Kawai teaches wherein the intervals are different for different tables (column 16, lines 38-42).

As to claim 32, Kawai teaches a method for maintaining an operational data store (see abstract; column 1, lines 8-10; and column 3, lines 29-33), comprising:
inserting new data into an insert table (see figure 10A, character 320);
periodically transferring data from the insert table to a history table (see figure 10A).

As to claim 33, Kawai teaches the method further comprising:
partitioning the history table (see column 2, lines 27-29).

As to claim 34, Kawai teaches wherein the history table is partitioned according to range (see column 18, lines 45-46).

As to claim 35, Kawai teaches the method further comprising:
sub-partitioning each partition (see figures 2 and 5).

As to claim 39, Kawai teaches the method further comprising:
creating a secondary table (see figure 10B, character 344);
filling the secondary table with selected data from the insert table (see figure 10B); and

transferring the secondary table into the history table, the selected data thereby being transferred into the history table (see figure 10B).

As to claim 40, Kawai teaches wherein the history table has an indexing scheme (see figures 15A and 15B; column 10, line 17; and column 13, lines 9-19), the method further comprising:

applying the history table indexing scheme to the secondary table (see figures 15A and 15B; column 10, line 17; and column 13, lines 9-19).

As to claim 41, Kawai teaches wherein the history table indexing scheme is applied to the secondary table prior to transferring the secondary table into the history table (see figures 15A and 15B).

As to claim 42, Kawai teaches the method further comprising:

creating a new partition in the history table, wherein the secondary table is transferred by being swapped with the new partition (see table 2, line 9).

As to claim 43, Kawai teaches wherein the secondary table and new partition are swapped by exchanging respective pointers (see column 10, line 14 and column 14, lines 25-30).

As to claim 44, Kawai teaches the method further comprising:
applying a database query to both the history table and the insert table (see column 2, lines 19-21 and column 4, lines 29-42).

As to claim 60, Kawai teaches a method for operating an operational data store (see abstract; column 1, lines 8-10; and column 3, lines 29-33), comprising:

creating a new partition in a composite-partitioned history table (see figure 7);
creating a partitioned temporary table (see figure 10B, character 332);
filling the temporary table with data from an insert table (see figure 10B, character 336);
exchanging the temporary table with the new partition (see figure 10B, character 348); and
receiving a query and applying the query to both the history table and the insert table (see column 2, lines 19-21 and column 4, lines 29-42).

As to claim 61, Kawai teaches the method further comprising:
creating a new partition in the insert table based on values from an existing partition (see figure 7); and
dropping the existing partition (see figure 10B, character 340).

As to claim 62, Kawai teaches an operational data store (see abstract; column 1, lines 8-10; and column 3, lines 29-33), comprising:

means for inserting new data into an insert table (see figure 10A, character 320);
means for periodically transferring data from the insert table to a history table
(see figure 10A); and
means for applying a database query to both the history table and the insert table
(see column 2, lines 19-21 and column 4, lines 29-42).

As to claim 63, Kawai teaches the operational data store further comprising:
means for batching new data (see column 2, lines 15-17); and
means for inserting the batched new data into the insert table with a single
database access (see column 2, lines 34-36).

As to claim 65, Kawai teaches an operational data store (see abstract; column 1,
lines 8-10; and column 3, lines 29-33), comprising:
means for creating a new partition in a composite-partitioned history table (see
table 2, line 9);
means for creating a partitioned temporary table (see figure 10B, character 332);
means for filling the temporary table with data from an insert table (see figure
10B);
means for exchanging the temporary table with the new partition (see figure 10B,
character 348); and
means for receiving a database query and applying the query to both the
history table and the insert table (see column 2, lines 19-21 and column 4, lines 29-42).

As to claim 66, Kawai teaches a computer program product for operating an operational data store, the computer program product comprising a computer usable medium having computer readable code thereon (see abstract; figure 1; and column 1, lines 6-8), including program code which:

inserts new data into an insert table (see figure 10A, character 320);

periodically transfers data from the insert table to a history table (see figure 10A);

and

applies a database query to both the; history table and the insert table (see column 2, lines 19-21 and column 4, lines 29-42).

As to claim 67, Kawai teaches wherein the program code further:

batches new data (see column 2, lines 15-17); and

inserts the batched new data into the insert table with a single database access (see column 2, lines 34-36).

As to claim 69, Kawai teaches a computer program product for operating an operational data store (see abstract; column 1, lines 8-10; and column 3, lines 29-33), the computer program product comprising a computer usable medium having computer readable code thereon (see abstract; figure 1; and column 1, lines 6-8), including program code which:

creates a new partition in a composite-partitioned history table (see figure 7);

creates a partitioned temporary table (see figure 10B, character 332);

fills the temporary table with data from an insert table (see figure 10B, character 336);

exchanges the temporary table with the new partition (see figure 10B, character 348); and

receives queries and applies the queries to both the history table and the insert table (see column 2, lines 19-21 and column 4, lines 29-42).

4. Claims 70-73 are rejected under 35 U.S.C. 102(e) as being anticipated by Battas et al. (U.S. patent 6,757,706).

As to claim 70, Battas et al. teaches a system for producing a desired level of service in a mixed workload environment (see column 20, lines 31-34), comprising:

a high-speed insert operational data store (ODS) (see column 15, lines 34-37);
a throttler for throttling selected transactions to the ODS (see column 15, lines 41-45); and

an aggregator for accumulating transactions into batches and inserting each of the batches into the ODS using a single database transaction per batch (see column 15, lines 41-46).

As to claim 71, Battas et al. teaches wherein the mixed workload environment includes at least two of archiving, OL.TP queries, DSS queries, high-speed inserts,

backup processes and extract/translate/load transactions (see figure 8; column 2, lines 50-54; and column 20, lines 28-33).

As to claim 72, Battas et al. teaches a method for producing a desired level of service in a mixed workload environment (see column 20, lines 31-34), comprising:

- insert transactions into an operational data store (ODS) at a high-speed (see column 15, lines 34-37);
- throttling selected transactions to the ODS (see column 15, lines 41-45);
- accumulating transactions into batches (see column 15, lines 41-46); and
- inserting each of the batches into the ODS using a single database transaction per batch (see column 15, lines 41-46).

As to claim 73, Battas et al. teaches wherein the mixed workload environment includes at least two of archiving, OLTP queries, DSS queries, high-speed inserts, backup processes and extract/translate/load transactions (see figure 8; column 2, lines 50-54; and column 20, lines 28-33).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14-22 and 45-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai (U.S. patent 5,717,924) in view of Kessler et al. (U.S. patent 5,761,706).

As to claim 14, Kawai teaches the operational data store further comprising:
an aggregator for batching the accumulated data and transferring the batched data into the insert table with a single database access (see column 2, lines 34-36).

Kessler et al. teaches stream buffers for high-performance computer memory system (see abstract), in which he teaches an aggregation buffer for accumulating new data (see abstract and column 1, lines 6-8).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kawai by the teaching of Kessler et al., because an aggregation buffer for accumulating new data, would enable the method because, it is advantageous to replace or supplement the secondary cache with buffers. Buffers require much less hardware to implement, yet can provide performance similar to a large secondary cache. "Method and apparatus for a filtered stream buffer coupled to a memory and a processor, and operating to prefetch data from the memory. The filtered stream buffer includes a cache block storage area and a filter controller. The filter controller determines whether a pattern of references has a predetermined relationship, and if so, prefetches stream data into the cache block storage area ", (see Kessler et al., abstract).

As to claim 15, Kawai, as modified teaches wherein the aggregator transfers a batch of new data into the insert table when the batch surpasses a maximum size (see Kessler et al., column 11, lines 30-34).

As to claim 16, Kawai, as modified teaches wherein batch size is measured according to a number data bytes (see Kessler et al., figure 11 and column 14, lines 29-30).

As to claim 17, Kawai, as modified teaches wherein batch size is measured according to a number of records (see Kessler et al., figures 9 and 11).

As to claim 18, Kawai, as modified teaches wherein the maximum size is configurable (see Kessler et al., figures 11 and 12 and column 16, lines 30-35).

As to claim 19, Kawai, as modified teaches wherein the aggregator transfers batches of new data into the insert table at regular intervals, defined by a given period (see Kessler et al., column 1, lines 18-20).

As to claim 20, Kawai, as modified teaches wherein the period is configurable (see Kessler et al., column 1, lines 11-20).

As to claim 21, Kawai, as modified teaches wherein the aggregator transfers batches of new data into the insert table when the aggregation buffer surpasses a given maximum buffer size (see Kessler et al., column 6, lines 51-53).

As to claim 22, Kawai, as modified teaches wherein the maximum buffer size is configurable (see Kessler et al., figures 11 and 12 and column 16, lines 30-35).

As to claim 45, Kawai teaches the method further comprising:
inserting the batched new data into the insert table with a single database access (see column 2, lines 34-36).

Kessler et al. teaches stream buffers for high-performance computer memory system (see abstract), in which he teaches aggregating new data into batches (see abstract and column 14, lines 55-57).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Kawai by the teaching of Kessler et al., because aggregating new data into batches, would enable the method because, batching the data makes easier and fast the transfer of the data to the corresponding table and is going to be just a single access to the memory.

As to claim 46, Kawai, as modified teaches wherein a batch of new data is transferred into the insert table when the batch surpasses a maximum size (see Kessler et al., column 11, lines 30-34).

As to claim 47, Kawai, as modified teaches wherein batch size is measured according to a number data bytes (see Kessler et al., figure 11 and column 14, lines 29-30).

As to claim 48, Kawai, as modified teaches wherein batch size is measured according to a number of records (see Kessler et al., figures 9 and 11).

As to claim 49, Kawai, as modified teaches wherein the maximum size is configurable (see Kessler et al., figures 11 and 12 and column 16, lines 30-35).

As to claim 50, Kawai, as modified teaches wherein batches of new data are transferred into the insert table at regular intervals, defined by a given period (see Kessler et al., column 1, lines 18-20).

As to claim 51, Kawai, as modified teaches wherein the period is configurable (see Kessler et al., column 1, lines 11-20).

As to claim 52, Kawai, as modified teaches the method further comprising:
aggregating the batches of new data in an aggregation buffer, wherein the batches are transferred into the insert table when the aggregation buffer surpasses a given maximum buffer size (see Kessler et al., column 6, lines 51-53).

As to claim 53, Kawai, as modified teaches wherein the maximum buffer size is configurable (see Kessler et al., figures 11 and 12 and column 16, lines 30-35).

Allowable Subject Matter

7. Claims 5-7, 23-28, 36-38, 54-59, 64, and 68 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Belix M. Ortiz whose telephone number is 571-272-4081. The examiner can normally be reached on Monday-Friday 9am-5pm.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

bmo

October 24, 2005



CHARLES RONES
SUPERVISORY PATENT EXAMINER